



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200
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D5425-

Job Sheet 188011



Part No: D5425-043

Job Qty: 1 ea

Part Name: Float Skidtube Assembly



Part Weight: 0 lbs

Status: New

Priority: Medium

Job Created: 12/31/18

Job Tracking No:

Due Date: 2/20/19

Created By: Jesse White

Type: Stock

Description:

Note: DWG D5425 REV.B IPP REV:A 17.11.02 NEW ISSUE DD VERF:JFS IPP REV:B 18.08.20 AS PER DWG
REV.B DD VERF:DP

Ship Via:

Bill of Materials



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
CANADA
TEL: 1 613 632-5200
Email: sales@dartaero.com
www.dartaerospace.com

Container No: S142708



Part: D5425-043

Job No: 188011

Serial No/Batch: S142708

Revision: B

Inspector:

Exp Date:

Instructions: Various STC's

Date: 01/09/19

Entered: _____ Date: _____

WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. _____

Route update only ☐

Job: _____ Part No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐	DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Eng. (Non-AW) ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Engineering ☐ Water Jet ☐ Supplier Quality ☐			
Date : _____	Sequence #: _____	QTY Affected : _____		MRB (QSI042)	
Description Work Order Deviation		Disposition			
				Completed By	
				Lead hand / Supervisor	
				QC / QA Coordinator	
Root Cause Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Presservation ☐ Material ☐ Product Improvement ☐ Process Improvement ☐ Human Factors ☐ ☐ Pressure/Forced ☐ Bending ☐ Crushing ☐ Cracks ☐ Crimp/Kink/Ripple/Wave/Twist ☐ Marks/Chatter ☐ Mislabeled		FAULT CATEGORY ☐ Contamination ☐ Misaligned/off center ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Incomplete/Unclear Instructions ☐ Drill Holes ☐ Fit/Function ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain Direction ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set/Set-up ☐ Positioned Wrong ☐ Outside Tolerance ☐ Drawing ☐ Finish ☐ Part Lost/Missing ☐ Misread			
Other/Details: _____					

Job Routing									
Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup Hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	1 Ea		2/20/19	0.00	0.00	Start Up Skid tubes-2		DD
110	Skid tubes	1 pcs		2/20/19	0.00	8.24	Skid tubes-3		DD
120	CNC Vertical Machining	1 pcs		2/20/19	0.00	22.77	HAAS1-4		MM
130	QC	1 pcs		2/20/19	0.00	0.00	QC2 Machining-4		2/19/01/17
140	QC	1 pcs		2/20/19	0.00	0.00	QC8 Machining-4		2/19/01/17
150	HandFinish	1 pcs		2/20/19	0.00	0.24	HandFinish1		DR 18/01/17
160	QC	1 pcs		2/20/19	0.00	0.00	QC7-5		MM
170	CNC Bend Skid tubes	1 pcs		2/20/19	0.00	2.63	CNC Bend Skid tube		MM
180	QC	1 pcs		2/20/19	0.00	0.00	QC5		BE
190	Skid tubes	1 pcs		2/20/19	0.00	8.24	Skid tubes-3		MM DAS
200	QC	1 pcs		2/20/19	0.00	0.00	QC5		38
210	HandFinish	1 pcs		2/20/19	0.00	0.24	HandFinish6		DR 19/01/17 30
220	QC	1 pcs		2/20/19	0.00	0.00	QC7-5		MM
230	Skid tubes	1 pcs		2/20/19	0.00	8.24	Skid tubes-3		MM
240	QC	1 pcs		2/20/19	0.00	0.00	QC5		19.02.01
250	HandFinish	1 pcs		2/20/19	0.00	0.24	HandFinish6		MM
260	QC	1 pcs		2/20/19	0.00	0.00	QC7-5		MM
270	SprayPaint	1 pcs		2/20/19	0.00	0.00	Spray Paint		FEB 05 2019
280	QC	1 pcs		2/20/19	0.00	0.00	QC14		FEB 20 2019 68
290	HandFinish	1 pcs		2/20/19	0.00	0.24	HandFinish4		MM 19-2-2019
300	QC	1 pcs		2/20/19	0.00	0.00	QC5		FEB 20 2019 68
310	Packaging	1 pcs		2/20/19	0.00	0.00	Packaging3-2		46 FEB 21 2019
320	QC21-SA	1 Ea		2/20/19	0.00	0.00	QC21		9-89

Part Op 110 - 1-Cut tube to finished length as per Dwg. 2-Deburr ends as per Dwg.

Descriptions: 120 - 1-Machine as per Dwg. and Folio FB536 DWG REV: _____ FOLIO REV: _____ 2-Deburr as per Dwg.

150 - 1-Scrub inside of tube with medium scotchbright.

170 - 1-Bend Aft end of tube as per Dwg. and Folio _____. Insert Bending mandrel DT 10328 at 20.0" from aft end. Use buggy A,B,C. to stabilize tube. HEIGHT 4.36 2-Bend Forward end of tube as per Dwg. and Folio _____. Insert Bending mandrel DT 10328 at 12.0" from fwd end. Use buggy A,B,C To stabilize tube. HEIGHT 7.460 3-Record dimensions on work order.

180 - #NAME?

190 - 1-Drill remaining holes of DETAIL M, N, P. USING DT10340 A,B,C,D 2-Open holes to finished size as per Dwg. 3-Deburr holes per QSI002 section 4.2.3 and blow out all chips from inside of tube.

230 - 1-Wet install crossbolt spacers of Section G-G. Swage to 0.437 as per Dwg. PRIMER B S102160 Start Time: _____ Finish Time: _____ ***CURE TIME 6HRS. BEFORE PROCEEDING TO NEXT STEP*** 2-Swage crossbolt spacers of Section F-F to 0.313 as per Dwg. 3-Trim / Grind flush, deburr. 4-Identify per QSI 044 6.1

250 - ***DO NOT SUBMERGE TUBE IN DEOXIDIZER***

270 - ***PLUG ALL CROSSBOLT SPACER HOLES PRIOR TO PRIME AND PAINT*** 1-PRIME AS PER DWG AND QSI005 4.2.1.3.3 PRIMER BATCH: _____ 2-PAINT AS PER DWG AND QSI005 4.2.2.4 PAINT BATCH: _____

290 - 1-Install FWD and AFT cap seal with sikaflex-241 / 291 B _____ Exp: _____ Start time: _____ Finish time: _____ 2-Coat all exposed hardware with LPS Procyon. Remove any excess off with MEK degreaser.

A/R LPS Procyon B _____

RE: Outsource - Atelier P0012483 CT 19-02-01

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
D6028-195	Crosstube Material, 7075-T73/T73511	1 Ea (1 ea)	90-Start up Operation	S017944
D5518-1	Crossbolt Spacer	18 pcs (18 ea)	230-Skid tubes	S018582 S039301
D5512-1	Crossbolt Spacer	12 pcs (12 ea)	230-Skid tubes	S146869 (40) S01757
AN3C5A	Bolt	6 Ea (6 ea)	290-HandFinish	S075999
D3672-1	Washer, Phenolic	6 pcs (6 ea)	290-HandFinish	F064008
D5483-041	Tow Cap Assembly	1 pcs (1 ea)	290-HandFinish	S180717
D5484-041	Aft Cap Assembly	1 pcs (1 ea)	290-HandFinish	S181941
NAS1149C0332R	Washer	6 Ea (6 ea)	290-HandFinish	S140515

Entered: _____ Date: _____



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				QC / QA Coordinator	
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Other/Details:					

Job Allocations				
Operation	Component Part	Required	Inventory	Allocated
90-Start up Operation	D6028-195	1	13	0
230-Skidtubes	D5512-1	12	40	0
	D5518-1	18	93	0
290-HandFinish	AN3C5A	6	1,249	0
	D3672-1	6	1,959	0
	D5483-041	1	0	0
	D5484-041	1	0	0
	NAS1149C0332R	6	3,130	0
Part Specifications				
Specifications could not be found.				

Plex 12/31/18 2:10 PM dart.white.jesse

Entered: _____ Date: _____

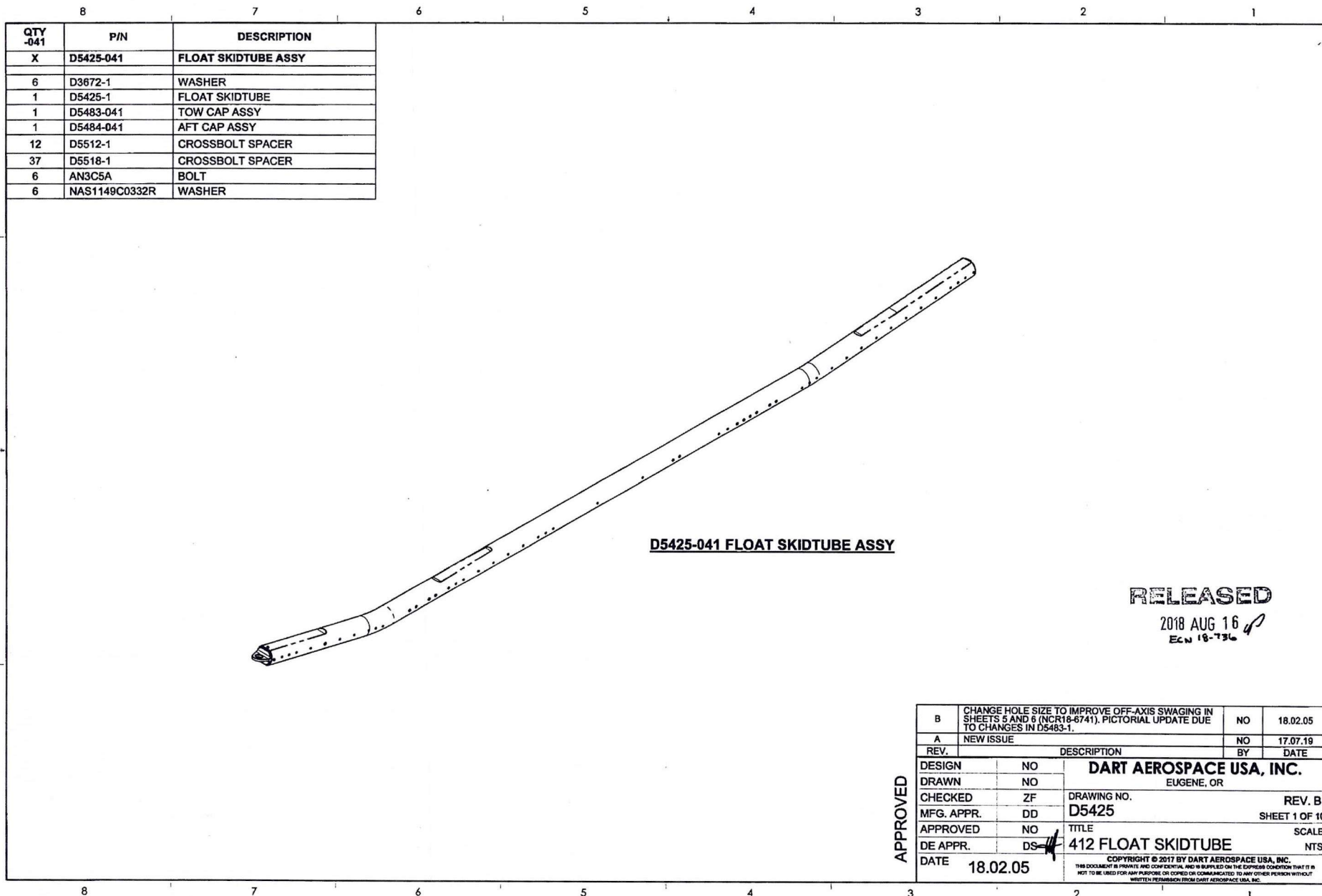


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Other/Details:					



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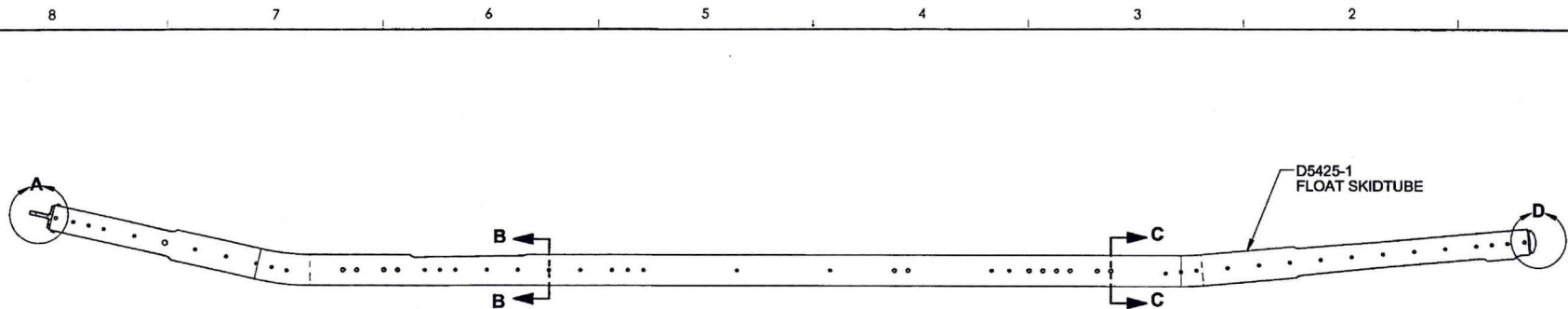


WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

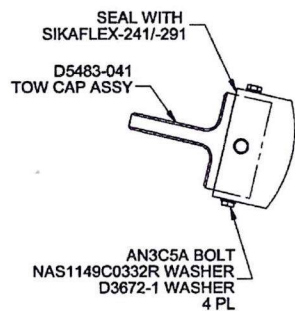
NCR No. _____

Route update only ☐

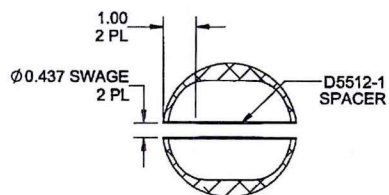
Job: _____ Part No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐	DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Eng. (Non-AW) ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Engineering ☐ Water Jet ☐ Supplier ☐ Quality ☐			
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Description Work Order Deviation		Disposition		Completed By	
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Other/Details:					



D5425-041 FLOAT SKIDTUBE ASSY

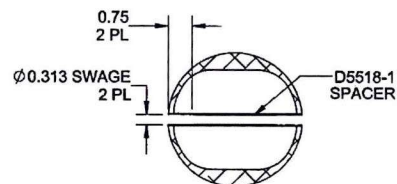


DETAIL A
SCALE 4X



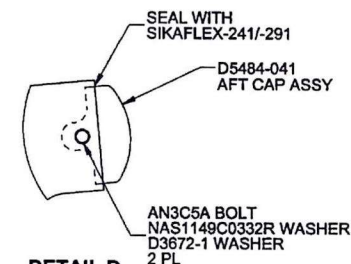
AFTER DRILLING AND BENDING, PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY:
1. WET INSTALL D5512-1 SPACER PER QSI 002
2. SWAGE TO Ø0.437 X 1.00 DEEP PER QSI 002
3. TRIM / GRIND FLUSH PER QSI 002

SECTION C-C
SCALE 4X
12 PL



AFTER DRILLING AND BENDING, PERFORM THE FOLLOWING FOR Ø0.377 HOLES ONLY:
1. INSERT D5518-1 SPACER
2. SWAGE TO Ø0.313 X 0.75 DEEP PER QSI 002
3. TRIM / GRIND FLUSH PER QSI 002

SECTION B-B
SCALE 4X
37 PL



DETAIL D
SCALE 4X

RELEASED

2018 AUG 16

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME PER DART QSI 005 4.2.1.3.3
PAINT PER DART QSI 005 4.2.2.4
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 54.5lbs
- 8) COAT ALL EXPOSED FASTENERS WITH LPS "LPS PROCYON"

APPROVED

DESIGN	NO	DART AEROSPACE USA, INC.	
DRAWN	NO	EUGENE, OR	
CHECKED	ZF	DRAWING NO.	REV. B
MFG. APPR.	DD	D5425	SHEET 2 OF 10
APPROVED	NO	TITLE	SCALE
DE APPR.	DS	412 FLOAT SKIDTUBE	NTS
DATE	18.02.05	COPYRIGHT © 2017 BY DART AEROSPACE USA, INC.	
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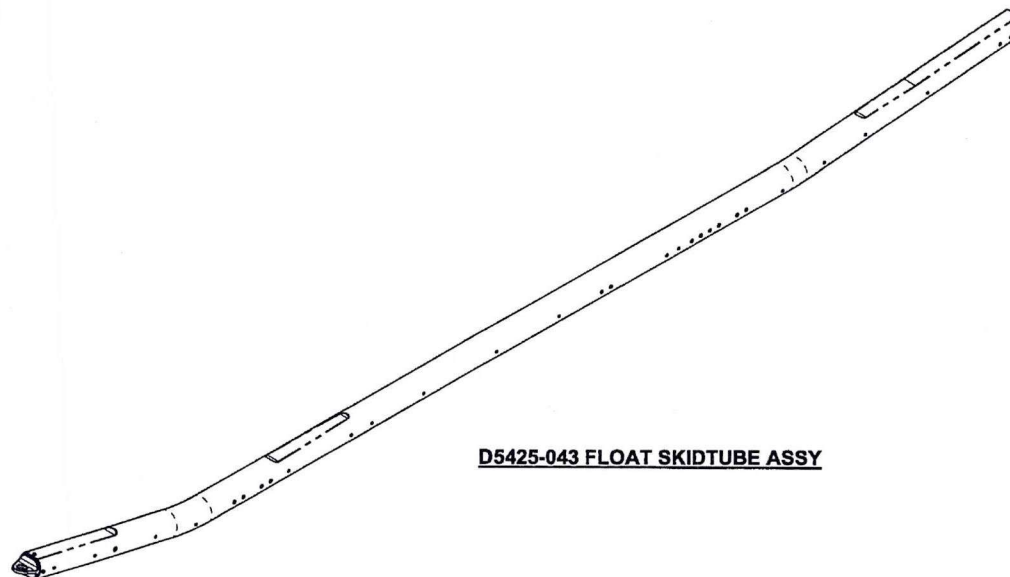
WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

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Job: _____ Part No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐	DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Eng. (Non-AW) ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Engineering ☐ Water Jet ☐ Supplier ☐ Quality ☐			
Date :	Sequence #:	QTY Affected :		MRB (QSI042)	
Description Work Order Deviation			Disposition		
			Completed By		
			Lead hand / Supervisor		
			QC / QA Coordinator		
Root Cause Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Presservation ☐ Material ☐ Product Improvement ☐ Process Improvement ☐ Human Factors ☐		FAULT CATEGORY ☐ Pressure/Forced ☐ Bending ☐ Crushing ☐ Cracks ☐ Crimp/Kink/Ripple/Wave/Twist ☐ Marks/Chatter ☐ Mislabeled ☐ Contamination ☐ Misaligned/off center ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Incomplete/Unclear Instructions ☐ Drill Holes ☐ Fit/Function ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain Direction ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set/Set-up ☐ Positioned Wrong ☐ Outside Tolerance ☐ Drawing ☐ Finish ☐ Part Lost/Missing ☐ Misread			
Other/Details:					

QTY -043	P/N	DESCRIPTION
X	D5425-043	FLOAT SKIDTUBE ASSY
6	D3672-1	WASHER
1	D5425-3	FLOAT SKIDTUBE (DART TRIBAG)
1	D5483-041	TOW CAP ASSY
1	D5484-041	AFT CAP ASSY
12	D5512-1	CROSSBOLT SPACER
18	D5518-1	CROSSBOLT SPACER
6	AN3C5A	BOLT
6	NAS1149C0332R	WASHER



D5425-043 FLOAT SKIDTUBE ASSY

RELEASED

2018 AUG 16 *JP*

APPROVED

DESIGN	NO	DART AEROSPACE USA, INC.	
DRAWN	NO	EUGENE, OR	
CHECKED	ZF	DRAWING NO.	REV. B
MFG. APPR.	DD	D5425	SHEET 3 OF 10
APPROVED	NO	TITLE	SCALE
DE APPR.	DS	412 FLOAT SKIDTUBE	NTS
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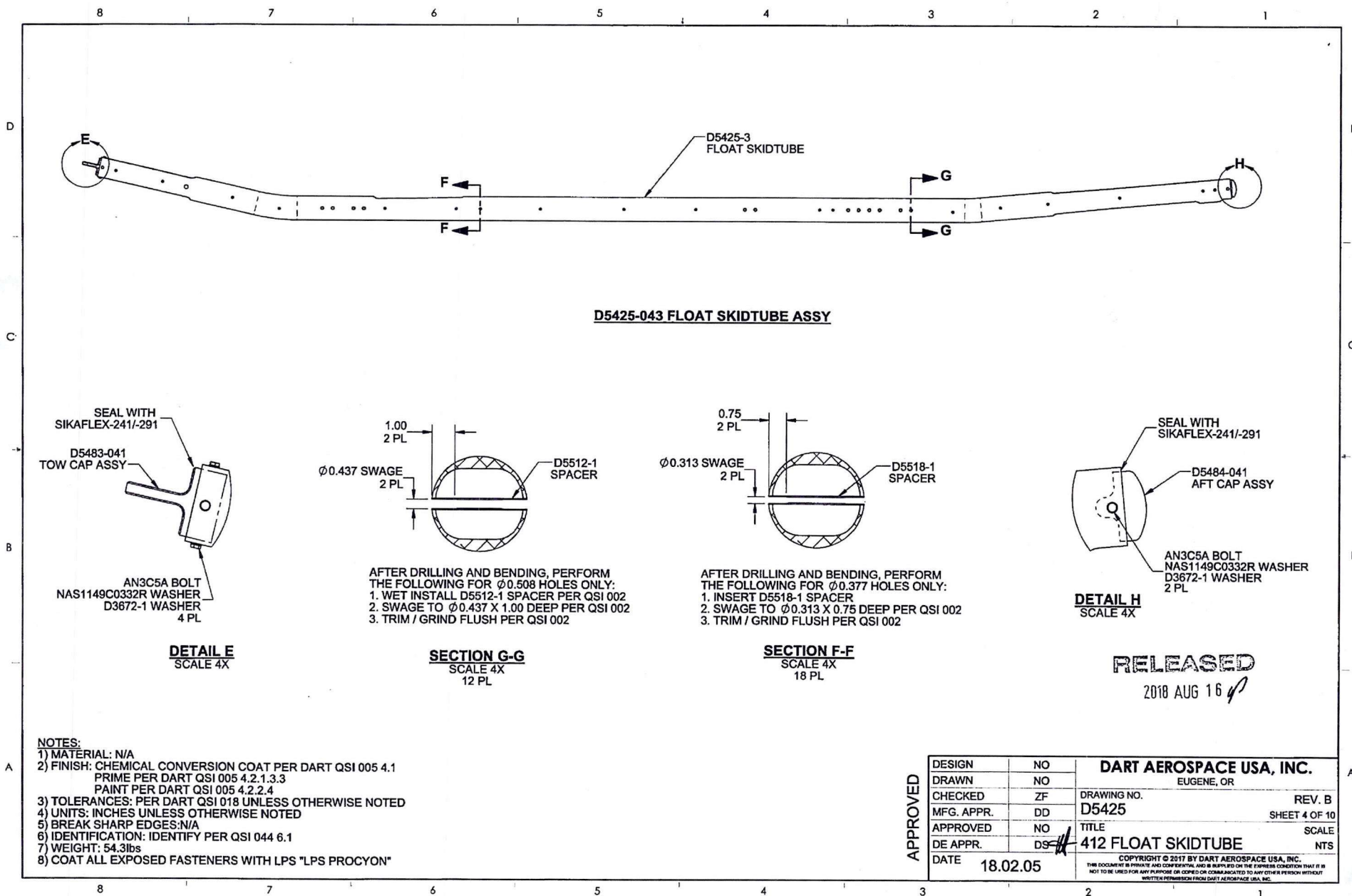


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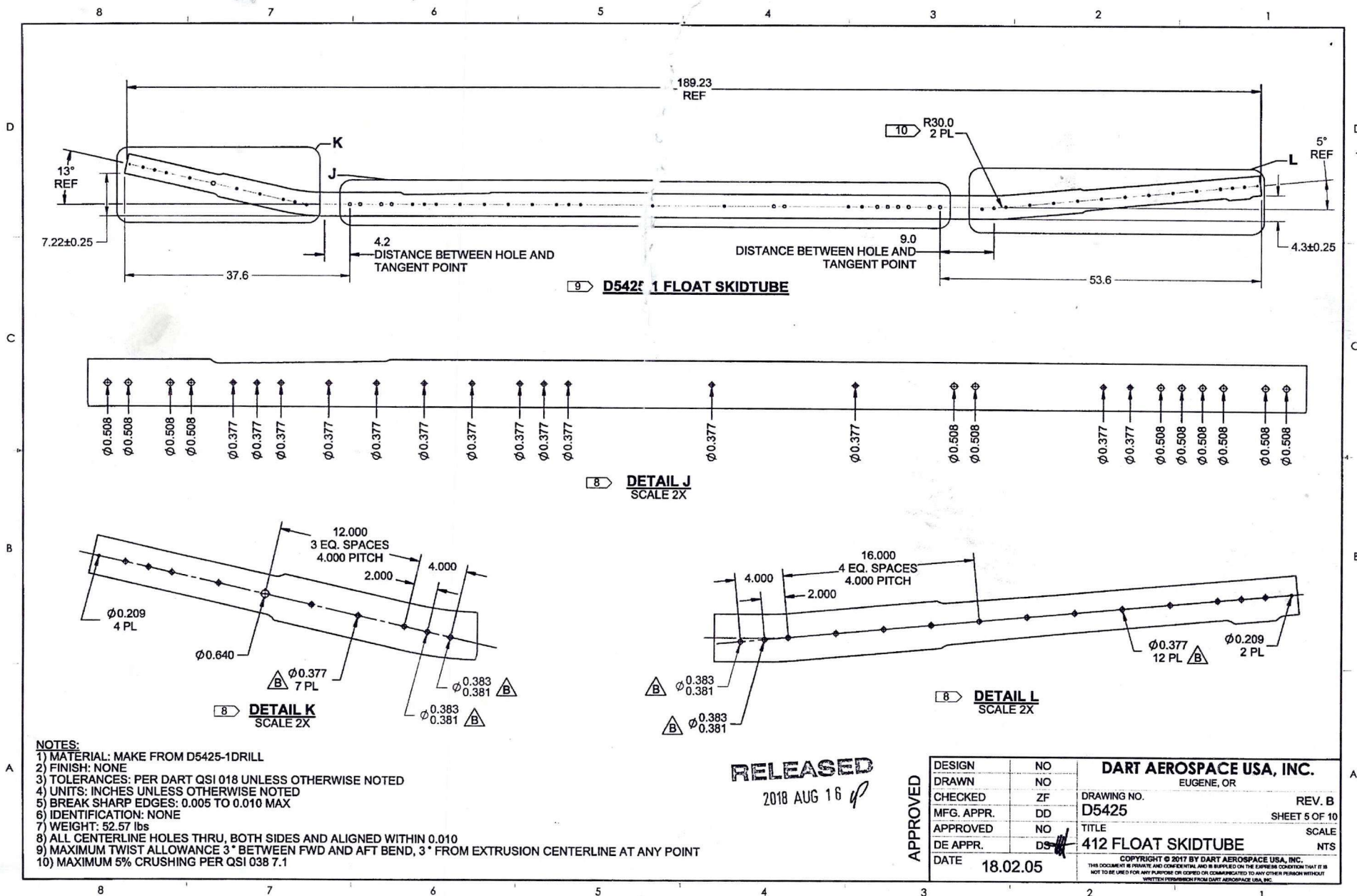


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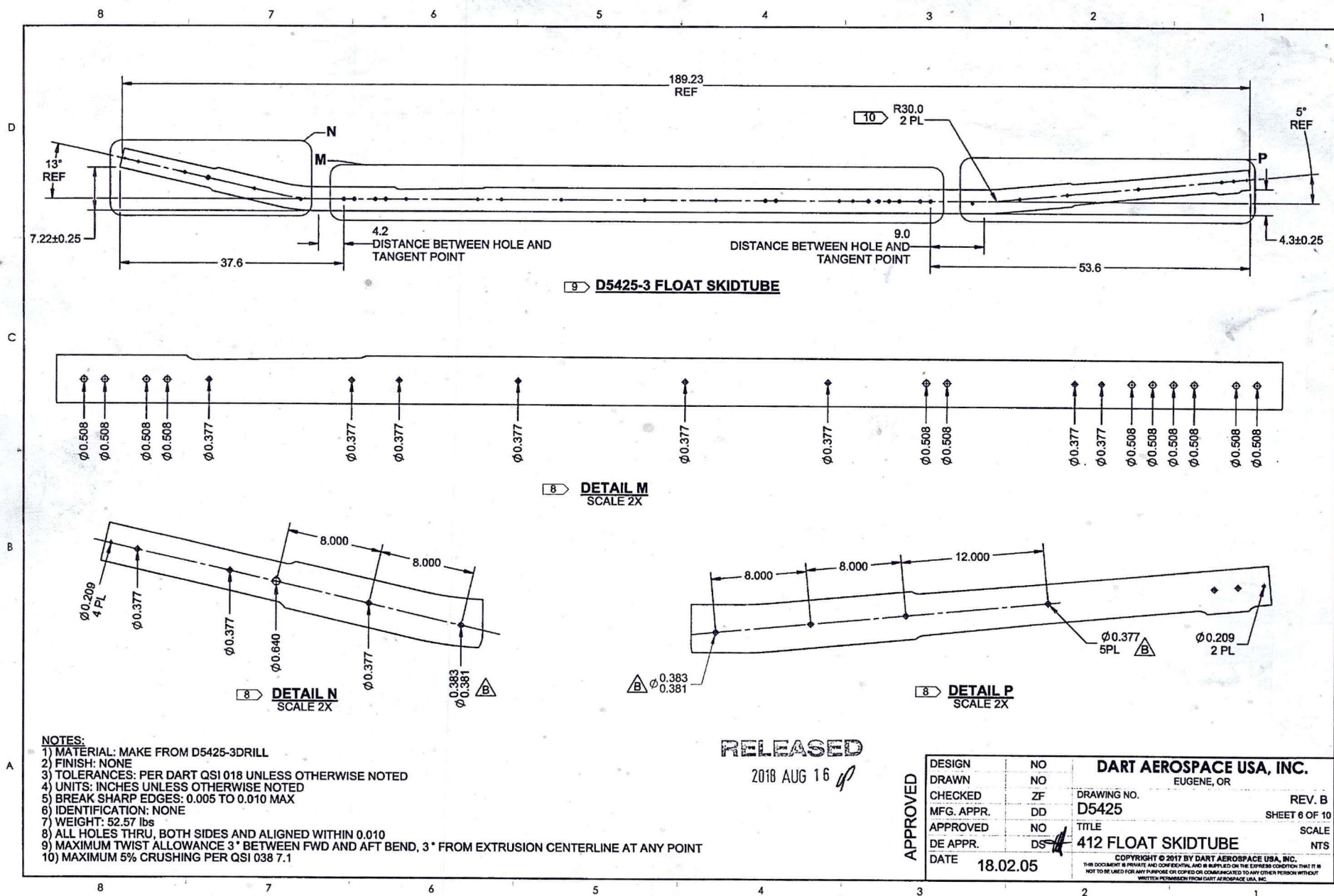


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Other/Details:					



Entered: _____ Date: _____

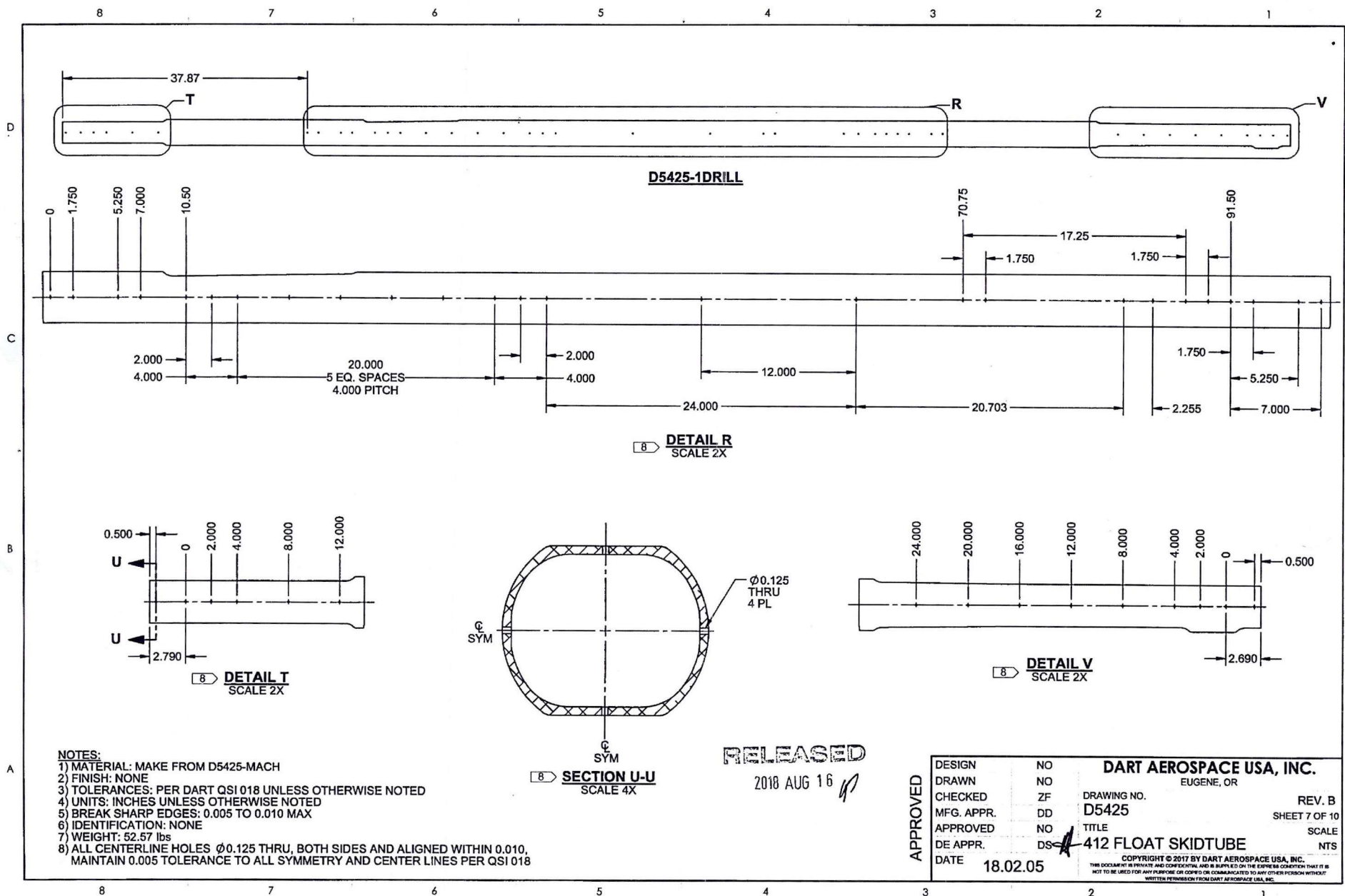


WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. _____

Route update only ☐

Job: _____ Part No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐	DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Eng. (Non-AW) ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Engineering ☐ Water Jet ☐ Supplier ☐ Quality ☐			
Date : _____	Sequence #: _____	QTY Affected : _____		MRB (QSI042)	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor	
				QC / QA Coordinator	
Root Cause Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Presservation ☐ Material ☐ Product Improvement ☐ Process Improvement ☐ Human Factors ☐ ☐ Pressure/Forced ☐ Bending ☐ Crushing ☐ Cracks ☐ Crimp/Kink/Ripple/Wave/Twist ☐ Marks/Chatter ☐ Mislabeled		FAULT CATEGORY ☐ Contamination ☐ Misaligned/off center ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Incomplete/Unclear Instructions ☐ Drill Holes ☐ Fit/Function ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain Direction ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set/Set-up ☐ Positioned Wrong ☐ Outside Tolerance ☐ Drawing ☐ Finish ☐ Part Lost/Missing ☐ Misread			
Other/Details:					



Entered: _____ Date: _____

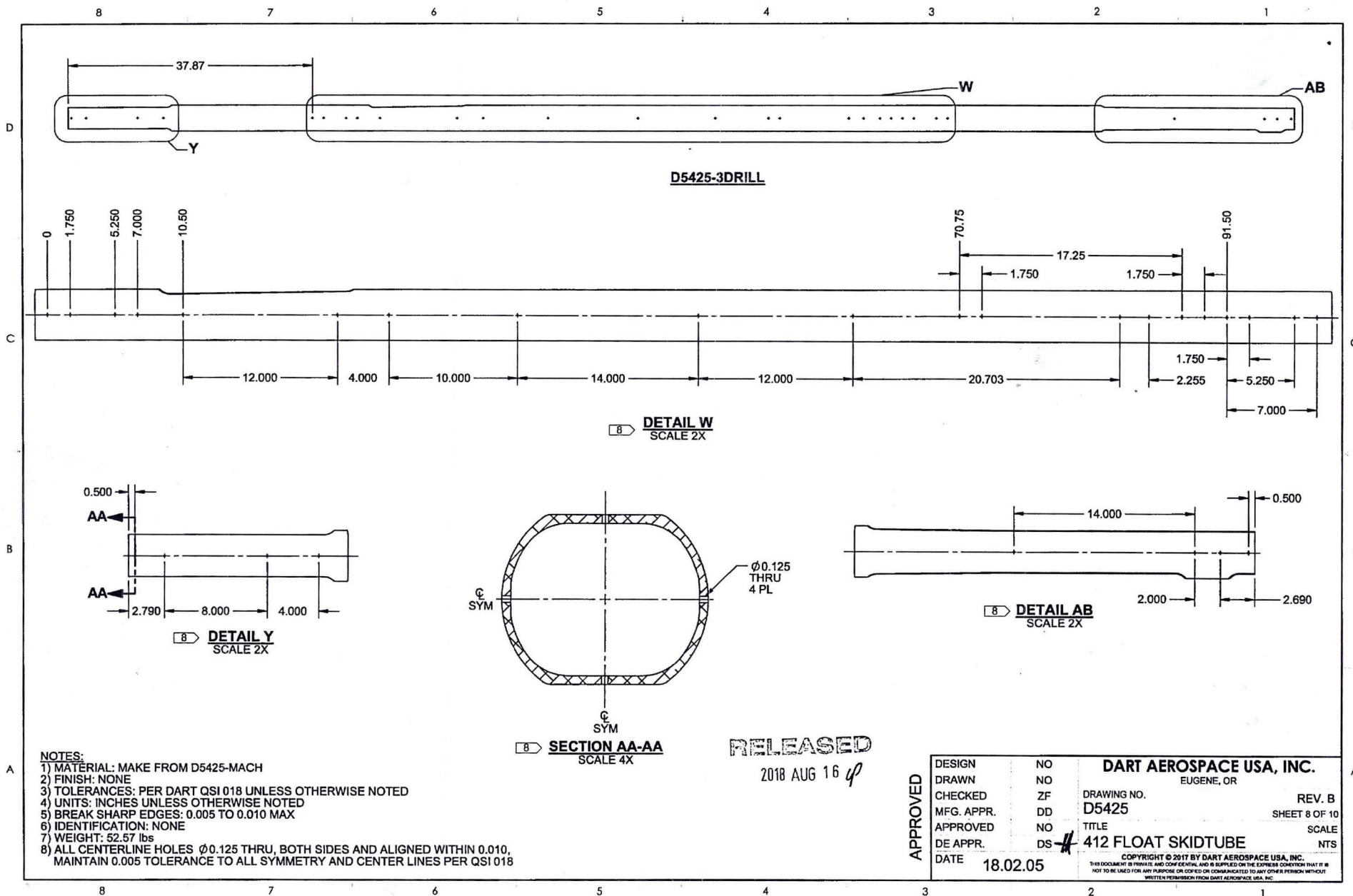


WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. _____

Route update only ☐

Job: _____ Part No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐	DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Eng. (Non-AW) ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Engineering ☐ Water Jet ☐ Supplier ☐ Quality ☐			
Date : _____	Sequence #: _____	QTY Affected : _____		MRB (QSI042)	
Description Work Order Deviation		Disposition			Completed By
					Lead hand / Supervisor
					QC / QA Coordinator
Root Cause Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Presservation ☐ Material ☐ Product Improvement ☐ Process Improvement ☐ Human Factors ☐		FAULT CATEGORY ☐ Pressure/Forced ☐ Bending ☐ Crushing ☐ Cracks ☐ Crimp/Kink/Ripple/Wave/Twist ☐ Marks/Chatter ☐ Mislabeled ☐ Contamination ☐ Misaligned/off center ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Incomplete/Unclear Instructions ☐ Drill Holes ☐ Fit/Function ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain Direction ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set/Set-up ☐ Positioned Wrong ☐ Outside Tolerance ☐ Drawing ☐ Finish ☐ Part Lost/Missing ☐ Misread			
Other/Details:					



Entered: _____ Date: _____

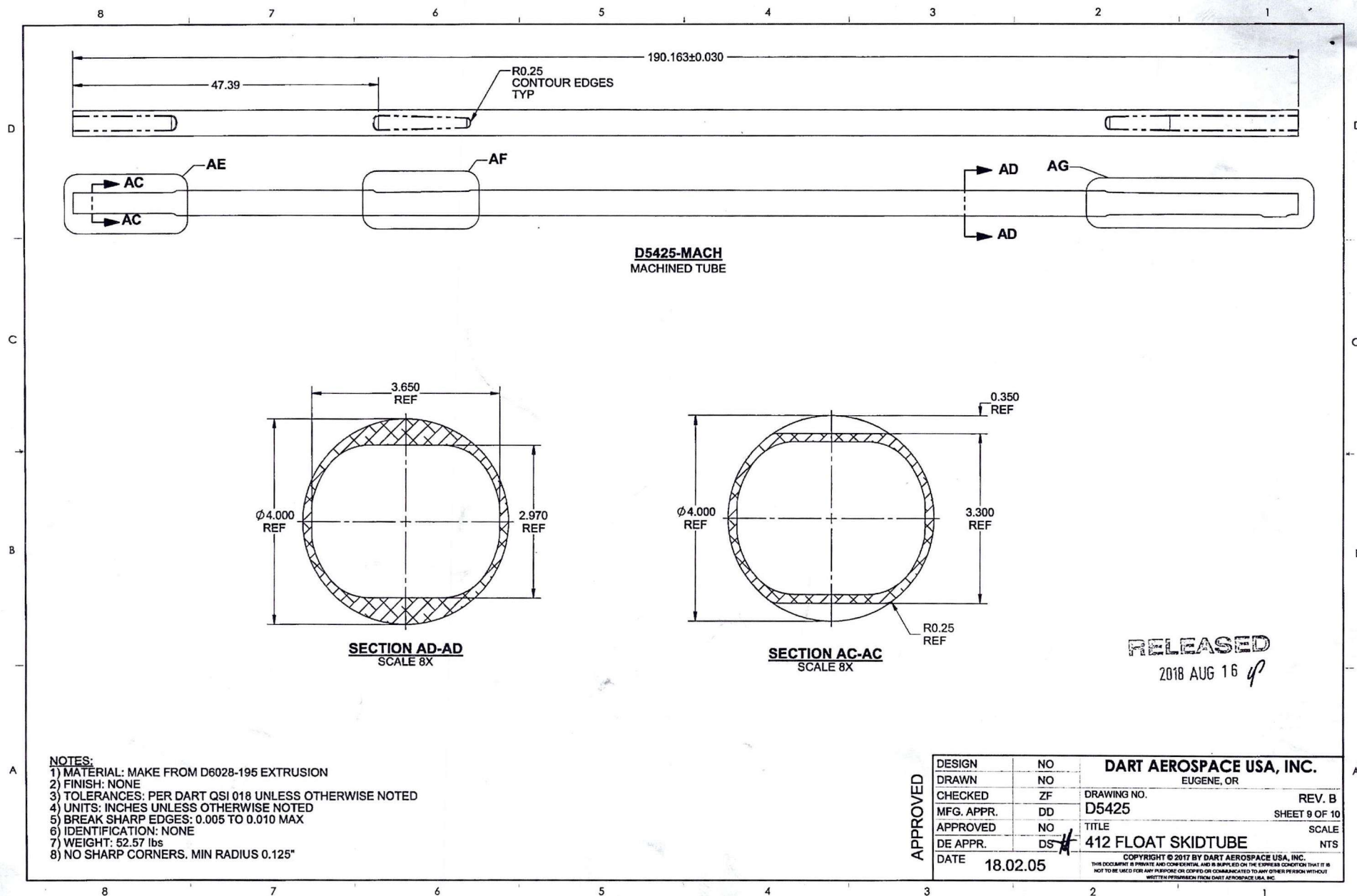


WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. _____

Route update only ☐

Job: _____ Part No. _____	DISPOSITION	DEPARTMENT/PROCESS			
	Rework ☐ Scrap ☐ Use-as-is ☐	Skid-tube ☐ Machining ☐ Large Fab ☐	Cross tube ☐ Small Fab ☐ Finishing ☐	Eng. (Non-AW) ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐	Engineering ☐ Water Jet ☐ Supplier ☐ Quality ☐
Date : _____	Sequence #: _____	QTY Affected : _____			MRB (QSI042) ☐
Description Work Order Deviation		Disposition			Completed By
					Lead hand / Supervisor
					QC / QA Coordinator
Root Cause		FAULT CATEGORY			
Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Presservation ☐ Material ☐ Product Improvement ☐ Process Improvement ☐ Human Factors ☐		☐ Pressure/Forced ☐ Bending ☐ Crushing ☐ Cracks ☐ Crimp/Kink/Ripple/Wave/Twist ☐ Marks/Chatter ☐ Mislabeled	☐ Contamination ☐ Misaligned/off center ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Incomplete/Unclear Instructions ☐ Drill Holes ☐ Fit/Function	☐ Power Loss/Surge ☐ Folio/Program ☐ Grain Direction ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set/Set-up	☐ Positioned Wrong ☐ Outside Tolerance ☐ Drawing ☐ Finish ☐ Part Lost/Missing ☐ Misread
Other/Details:					



Entered: _____ Date: _____



WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. _____

Route update only ☐

Job: _____ Part No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐	DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Eng. (Non-AW) ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Engineering ☐ Water Jet ☐ Supplier ☐ Quality ☐			
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Other/Details:					



2018 AUG 16 4

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WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. _____

Route update only ☐

Job: _____ Part No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐	DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Eng. (Non-AW) ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Engineering ☐ Water Jet ☐ Supplier ☐ Quality ☐			
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Other/Details: _____					



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER PO042483



Supplier: ATE003-VC
Atelier Debosselage
358 Principale
Calumet
QC
J0V 1B0 Canada
Phone: 819 242 5633

PO No: PO042483
PO Date: 2/1/19
Due Date: 2/5/19
**Purchase Order
Revision:**
Revision Date:
Ship-To Contact: Tsimiklis, Chrisoula

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

Via: Ground
Pynt Terms: Net 30
Freight Terms:
Special Comments:

Items

Line Item	Job	Part	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
1	188017	D5425-043	Float Skidtube Assembly : Various STC's ***PLUG ALL CROSSBOLT SPACER HOLES PRIOR TO PRIME AND PAINT*** 1-PRIME AS PER DWG AND QSI005 4.2.1.3.3 PRIMER BATCH: _____ 2- PAINT AS PER DWG AND QSI005 4.2.2.4 PAINT BATCH: _____	Firmed	-	2/5/19	1 pcs	0 pcs	1 pcs	\$300.00/pcs	\$300.00
	188011		1 X FEB 05 2019	Firmed	-	2/5/19	1 pcs	0 pcs	1 pcs	\$300.00/pcs	\$300.00
	188013		1 X FEB 05 2019	Firmed	-	2/5/19	1 pcs	0 pcs	1 pcs	\$300.00/pcs	\$300.00
	170127		1 X FEB 05 2019	Firmed	-	2/5/19	1 pcs	0 pcs	1 pcs	\$300.00/pcs	\$300.00
Sub Total:							4	0	4		\$1,200.00

Grand Total: \$1,200.00



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER PO042483



Order Notes

Procurement Quality Clauses

A005 right of entry
A012 chemical and physical test report
A016 personnel qualification
A017 raw material identification (as applicable)

A022 Apical Processing
A024 process certifications
A026 certification of material conformance

A041 quality management system
A042 dart notification by supplier
A043 retention of quality documents

A048 counterfeit parts avoidance, detection, mitigation and disposition program

A049 supplier awareness

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

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